

THE UNIVERSITY OF CHICAGO

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a second object table for holding a substrate;

a reference frame; and

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providing a substrate provided with a radiation-sensitive layer to said second object table;

providing a projection beam of radiation using the illumination system;

using said patterning means to endow the projection beam with a pattern in its cross section; and

projecting the patterned beam onto said target portions of said substrate; characterized in that:

prior to or during said step of projecting, one of said object tables that is moveable relative to said reference frame is determined to be in a reference position by the steps of emitting radiation from a radiation source mounted on said reference frame toward a mirroring device mounted on said one object table, reflecting the radiation by said mirroring device and detecting the reflected radiation in a two-dimensional radiation detector mounted in a fixed position on said reference frame.

13. A method according to claim 12, wherein said lithographic projection apparatus further comprises an incremental position sensing system for sensing the position of said one object table, said method comprising the further step, after said one object table is determined to be in said reference position, of determining the absolute position of said one object table by measuring movements thereof relative to said reference position using said incremental position sensing system.

14. A device manufactured according to the method of claim 12 or 13.

15. A position detection device comprising:

a radiation source mounted on a reference frame;
a two-dimensional radiation detector mounted in a fixed position on said reference frame; and

a mirroring device mounted on an object that is moveable relative to said reference frame so as to reflect radiation emitted by said radiation source toward said radiation detector.

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